Amendments to the Drawings:

Replacement drawing sheets reflecting correction of shadings to Figures 1-3 and 5-6 are provided herein in response to the drawing objection stated on page 2 of the Office Action. Properly corrected replacement drawing sheets in compliance with 37 C.F.R. 1.121(d) are believed to have been provided. Reconsideration and withdrawal of this objection is respectfully solicited.

Attachment: Replacement Sheets

Remarks

Claims 1-4 and 7-14 are pending in the application, of which claims 1-4 and 7-14 are rejected. By this paper, Applicant amends claim 4 to provide greater clarity. Applicant respectfully traverses the rejection of claims; however, Applicant amends the claims in order to further prosecution.

Claim Rejections - 35 U.S.C. § 103

Rejection of claims 1-2 over Lampotang et al. (U.S. 5,779,484), hereinafter "Lampotang") and Gordon et al. (3,662,076, hereinafter "Gordon")

The Examiner has rejected claims 1-2 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Gordon* (the Office Action, pages 3-4).

Among other things, claim 1 requires that the means for pulling down the chest skin includes a mechanism adapted to pull the chest skin in a synchronous fashion with the at least one lung raising and lowering the chest. The Examiner admits that *Lampotang* fails to teach this feature. The Examiner cites *Gordon* in an attempt to cure *Lampotang's* defect.

Gordon fails to cure *Lampotang*. *Gordon* uses vertical push rods 28 at variable pulse locations to simulate pulse action (Col. 2, lines 57-60 and Figure 2). Each of the vertical push rods 28 is mounted for limited vertical reciprocation in a particular sequence (Col. 3, line 1-4 and Figure 3). The vertical push rods 28 are selectively forced to an upward direction against the skin of the manikin to effect a pulse-like movement (Col. 3, lines 34-39). *Gordon* does not teach a means for pulling down the chest skin, as *Gordon*'s push rods 28 are merely positioned to push toward a chest skin, but not to pull down, much less to pull down in a synchronous fashion with the lung raising and lowering the chest as required in claim 1.

As with *Lampotang*, *Gordon* does not teach an elastic pulling strap, but only rigid push rods 28 for use in limited vertical movements. It would not be a simple design option, and

contrary to what the Examiner has suggested, to replace the rigid push rod 28 with an elastic pulling strap, as it would not be practical, if not all impossible, to use an elastic pulling strap, for instance a rubber band, for pushing up against the pressure exerted by the chest skin. There is no need to attach, push rod 28 to the skin, while it is necessary to affix Applicant's pull strap to the skin to draw the skin inward to form a visible depression. *Lampotang* and *Gordon* do not fairly suggest this feature nor this function.

Rejection of claim 3 over *Lampotang* and *Gordon* and Thoman (U.S. 4,606,328, hereinafter "*Thoman*")

The Examiner has rejected claim 3 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Gordon* and *Thoman* (the Office Action, page 5).

Deficiency of *Lampotang* and *Gordon* in teaching required features of claim 1, from which claim 3 depends, is stated above. The Examiner has not set forth how *Thoman* would cure this deficiency.

Thoman teaches an inflatable bladder secured to the spine section so that the front of the outer surface of the pleural cavity moves outwardly and inwardly when the air pressure in the bladder is varied (Col. 2, lines 22-26); and that the bladder can be inflated by pneumatic pump means (Col. 2, lines 32-38). *Thomson* neither teaches a means for pulling down the chest skin, as at most *Thomson* merely teaches a passive deflation upon the removal of a pressured force; nor does *Thomson* teach a mechanism to synchronize the lowering or raising of the chest.

Rejection of Claims 4, 9 and 11-14 Over Lampotang

The Examiner has rejected claims 4, 9, and 11-14 under 35 U.S.C. § 103(a) over *Lampotang* (the Office Action, pages 5-8).

Claim 4 requires, among other things, that the at least one lung is arranged between two plates and that one plate is fixed and the other is movable relative to the torso. *Lampotang* does not teach or suggest this claimed feature.

At most, and as shown in Figure 2, *Lampotang* teaches that a lung bellows 100 is disposed away from either top plate 120, or a bottom plate 112. Moreover, plates 120 and 112 are movable together as they are both connected to a rigid piston rod 114. Therefore, plates 120 and 112 are not positioned such that one plate is movable while the other is not movable but rather fixed as required in claim 4.

Claims 11, 12 and 13 depend from claim 4 and are therefore in allowance with respect to claim 4.

Claim 9 requires a pressure sensor located outside of the actuator or lung and a nozzle to neutralize a pressure difference between the sensor and the lung. The Examiner admits that *Lampotang* does not teach this feature of claim 9 nor the additional feature recited in claim 14 dependent from claim 9. The above-mentioned feature of claim 9 is not merely a design variation, as that feature is positioned to fulfil a particular function according to one embodiment of the Applicant's invention. That function is based on Applicant's findings with respect to the following: the pressure of each actuator is measured through the use of pressure values to set a limit for the degree of fill; in order to avoid having to use a double set of air hoses (one for air into and out of the actuator and one for pressure measurements) in manikins where there may already be many hoses and little room, the pressure is measured closer to the pressure source (the valve) for the individual actuator; in order to minimize the effect of a pressure overshoot immediately after opening the valve, the pressure is measured after a nozzle that restricts the air flow and provides pressure measurements that are approximately equal to the pressure in the actuator (please see for instance paragraph [0039] of the published application).

Rejection of claims 7-8 over *Lampotang* over Johnson et al. (U.S. 5,394,766, hereinafter "*Johnson*") and Thu et al. (U.S. 6,336,047, hereinafter *Thu*)

The Examiner has rejected claims 7-8 under 35 U.S.C. § 103(a) over *Lampotang* in view of *Johnson* and *Thu* (the Office Action, pages 8-9).

Claim 7 requires, among other things, a torso having two actuators arranged on the backside of the torso for simulation of muscle movement. The Examiner admits *Lampotang* does not teach this feature of claim 7. In an attempt to cure *Lampotang's* deficiency, the Examiner cites *Johnson* for support with particular reference to elements 50 and 50' in Figure 1. *Johnson* is directed to robotic human torso and elements 50 and 50' are left and right shoulder rotacs for movement forward and back (Col. 10, lines 4-9) to pivot about the clevis pins 54, 54' (Col. 10, lines 24-29). *Johnson* makes no mention of employing the rotacs 50, 51' for simulating muscle movements; nor does *Johnson* teach that the rotacs 50, 51' are arranged on the backside of the torso as required in claim 7. As depicted in Figures 1-6, the rotacs 50, 51' are substantially centrally position along a cross-section of the manikin for providing forward and back shoulder movements.

Contrary to the Examiner's assertions stated on page 9 of the Office Action, it would not have been obvious to one of ordinary skill in the art to have used *Johnson's* actuators 50, 50' to simulate a patient's movements taught by *Thu*. *Thu* is directed to a communication system between training sensors and electrodes of a difibrillator (Title), and in particular to a system having a plurality of sensors attached to a manikin to effect a wireless and bi-directional communication (Claim 1). The Examiner has not set forth how the rigid shoulder rotacs 50, 50' would simulate muscle movement, nor has the Examiner set forth any articulated reasonings that the sensor-mediated communication system per *Thu* would cure deficiencies of *Lampotang* and *Johnson* in failing to teach two or more actuators located on the backside of a torso for simulating muscle movement.

Clam 8 depends from claim 7 and further requires that the actuators are air cushions. Contrary to the Examiner's assertions stated on page 9 of the Office Action, it is not a matter of design choice to use the air cushion of claim 8 in view of *Johnson's* teaching of rigid shoulder rotac 50, 51', as replacing air cushions for rotac 50, 51' would render *Johnson's* robot inoperable for lack of mechanism for supporting shoulder movements to pivot about the clevis pins 54, 54' stated hereinabove.

Rejection of claim 10 over Lampotang in view of LeRoy (U.S. 4,003,141, hereinafter "LeRoy") and Eggert et al. (U.S. 2004/0157199, hereinafter "Eggert")

The Examiner has rejected claim 10 under 35 U.S.C. § 103(a) over *Lampotang* in view of *LeRoy* and *Eggert* (the Office Action, pages 10-11).

The Examiner admits that *Lampotang* fails to teach, yet required in claim 10, a head having one or more cushions in at least one fontanelle area on the head of the simulator wherein the air cushions are filled with air to simulate an increased pressure in the brain and provide a swelling in the fontanelle area. The Examiner states that an abnormal pressure-creating means, element 30, in at least one fontanelle area is present in *LeRoy*. *LeRoy* teaches a pressure creating means 30, but element 30 is located adjacent the dura membrane and underneath the firm plastic outer layer 18. *LeRoy* makes no mention of fontanelle regions of a head. The Examiner further cites *Eggert* for support with reference to paragraph [0128] in an attempt to cure the deficiency. Eggert, with reference to paragraph [0128], teaches that a value 578 is positioned within a manikin to simulate edema in the tongue or to simulate swelling in the pharyngeal air reservoir 590. Eggert, again, makes no mention of fontanelle region of the head, swelling there within, or method of simulating such swelling. Therefore, the combination of *Lampotang*, *LeRoy*, and *Eggert* would not teach an air cushion in a fontanelle region of the simulator head, and claim 10 is non obvious.

CONCLUSION

In view of the foregoing, Applicant respectfully asserts that the application is in condition for allowance, which allowance is hereby respectfully requested.

The petition fee of $1,110.00 is being paid herewith by Deposit Account No. 02-3978. Please charge any additional fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

Respectfully submitted,

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Date: July 6, 2009

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